

REMARKS

The above-identified patent application has been reviewed in light of the Office Action dated June 5, 2002. Claims 8 and 9 have been amended without intending to abandon or to dedicate to the public any patentable subject matter. Accordingly, Claims 1-6 and 8-12 are now pending. As set out more fully below, reconsideration and withdrawal of the objections to and rejections of the claims are respectfully requested.

Claims 8 and 9 stand objected to because the stated units "mm" are found to be incorrect. In the amendments set forth above, Claims 8 and 9 have been amended to state the correct units, "µm". In view of these amendments, Applicants submit that the objections to Claims 8 and 9 should be reconsidered and withdrawn.

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. In particular, the term "about" is found to render Claim 1 indefinite. However, Applicants note that the term "about" is definite because infringement of the claims can clearly be assessed. In addition, Applicants note that the Office Action does not cite any prior art having characteristics that are close to those that are cited by the claim. (See MPEP § 2173.05(b)). Accordingly, Applicants submit that the rejections of Claims 1-6 and 8-12 under 35 U.S.C. § 112, second paragraph, should be reconsidered and withdrawn.

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,484,620 to Oechsle et al. ("Oechsle"). In order to establish a *prima facie* case of obviousness under 35 U.S.C. § 103, there must be some suggestion or motivation to modify the

reference teaching, there must be a reasonable expectation of success, and the prior art reference must teach or suggest all the claim limitations. (MPEP § 2143). It is submitted that a *prima facie* case to reject Claims 1-6 and 8-12 has not been established. In particular, the cited reference does not teach, suggest or disclose a method for filtering an unfiltered liquid using a filter aid having the claimed characteristics. Accordingly, the rejections of the claims should be reconsidered and withdrawn.

The invention set forth in Claim 1 is generally directed to a method for filtering an unfiltered liquid. According to the method, a filter aid is provided that has a population of individual angular particles, said particles being defined by a shape factor of from about 0.6 to about 0.85 and by uniformity coefficient of D80/D10 of from 1.8 to about 5. These characteristics provide a filter aid with much improved characteristics as compared to previously available filter aids. (See, e.g., Specification pp. 10-11). The reference cited in the Office Action does not teach, suggest or disclose a method as recited by Claim 1.

In addition, further aspects of the inventive method set forth in the dependent claims are also not disclosed by Oechsle. For example, methods for filtering an unfiltered liquid using a filter aid having individual angular particles with a specific surface of less than $10^6 \text{ m}^2/\text{m}^3$ (Claim 2), a specific mass of less than or equal to 125% of the specific mass of the suspension to be filtered (Claim 3), a size distribution having an average diameter calculated from the volume of the particles, measured according to the Malvern measurement method which define an equivalent diameter from about $30\mu\text{m}$ to about $40\mu\text{m}$ (Claim 8), 70% of the individual particles have a diameter of between 15 and $50\mu\text{m}$ (Claim 9), or 90% of the individual particles have a diameter of between 15 and $50\mu\text{m}$ (Claim

14) are not taught, suggested or disclosed by Oechsle. As additional examples, Oechsle does not teach, suggest or disclose a method for filtering an unfiltered liquid in which a filter cake having a porosity comprised between 0.5 and 0.7 (Claim 10), or a permeability greater than 0.5 Darcy (Claim 11) is used. Accordingly, for at least these additional reasons, the various dependent claims are not obvious in view of Oechsle.

The Oechsle reference is generally directed to a method of manufacturing filter aids. In particular, Oechsle discusses forming an agglomerate by mixing and compressing particles together, heating the agglomerate to a temperature near the melting point of the particles, and "providing a particle size that is suitable for an intended use by subjecting the agglomerate to one of a screening process or a grinding process." (Oechsle, col. 1, l. 65 to col. 2, l. 6). However, although Oechsle notes that a filter aid manufactured as discussed in Oechsle may be used in connection with the processing of beverages, including beer, Oechsle does not teach, suggest or disclose a filter aid having the characteristics set forth in the pending claims. In particular, Oechsle is limited to discussing a method for producing a filter aid having "desired characteristics," but without specifying such characteristics as are set forth in the claims of the pending patent application.

Furthermore, it would not be obvious to one of ordinary skill in the art to arrive at the method set forth in the pending claims on the basis of the Oechsle reference. In particular, Oechsle provides no teaching, suggestion or disclosure of selecting a filter aid having the claimed characteristics as part of a method for filtering an unfiltered liquid. Furthermore, as noted in the specification of the present application, a method that includes a step of providing a filter aid as claimed provides unexpected results. For example, Table 2 of the specification demonstrates that a filter aid in

Application No. 09/707,536

accordance with the present invention formed from either Rilsan RS or Orgasol forms cakes in the presence of yeast having a specific resistance that is significantly lower than the cakes obtained with filter aids formed from kieselguhrs or spherical beads. (Specification, pp. 10-11).


Because the cited reference does not teach, suggest or disclose a filter aid having the claimed characteristics, the rejections of the claims in view of Oechsle should be reconsidered and withdrawn.

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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Date: December 3, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 8 and 9 have been amended as follows:

8. (Once Amended) The method for filtering an unfiltered liquid of Claim 1, wherein the population of angular particles is defined by a size distribution having an average diameter calculated from the volume of the particles, measured according to the Malvern measurement method which define an equivalent diameter from about 30 [mm]μm to about 40 [mm]μm.

9. (Once Amended) The method for filtering an unfiltered liquid of Claim 1, wherein said population of individual angular particles is defined by the fact that 70% [and preferably 90%] of the individual particles have a diameter of between 15 and 50 [mm]μm.

Claim 14 is new.